

Claims

1. A method for identifying a modulatory compound that is capable of decreasing the expression or activity of a *daf-16* gene, said method comprising:
 - (a) providing a nematode, isolated nematode cell, or isolated mammalian cell expressing a *daf-16* gene; and
 - (b) contacting said nematode, isolated nematode cell, or isolated mammalian cell with a candidate compound, a decrease in *daf-16* expression or activity following contact of said nematode, said isolated nematode cell, or said isolated mammalian cell with said candidate compound identifying a modulatory compound.
2. The method of claim 1, wherein said compound is a candidate compound for ameliorating or delaying an impaired glucose tolerance condition, atherosclerosis, or obesity.
3. The method of claim 1, wherein said nematode is *C. elegans*.
4. The method of claim 1, wherein said *daf-16* gene is a nematode *daf-16* gene.
5. A method for the identification of a compound that is a candidate compound for ameliorating or delaying an impaired glucose tolerance condition, said method comprising the steps of:
 - (a) providing a *daf-2*, *daf-16* mutant nematode;
 - (b) expressing in the cells of said nematode a mammalian AFX polypeptide, whereby said nematode forms a dauer larva; and

(c) contacting said dauer larva with a compound, wherein release from the dauer larval state is an indication that said compound is a candidate compound for ameliorating or delaying an impaired glucose intolerance condition.

6. A method for the identification of a compound that is a candidate compound for ameliorating or delaying an impaired glucose tolerance condition, said method comprising the steps of:

(a) providing an *age-1*, *daf-16* mutant nematode;

(b) expressing in the cells of said nematode a mammalian AFX polypeptide, whereby said nematode forms a dauer larva; and

(c) contacting said dauer larva with a compound, wherein release from the dauer larval state is an indication that said compound is a candidate compound for ameliorating or delaying an impaired glucose intolerance condition.

7. A method for the identification of a compound that is a candidate compound for ameliorating or delaying an impaired glucose tolerance condition, said method comprising the steps of:

(a) providing a *daf-2*, *daf-16* mutant nematode;

(b) expressing in the cells of said nematode a mammalian FKHR polypeptide, whereby said nematode forms a dauer larva; and

(c) contacting said dauer larva with a compound, wherein release from the dauer larval state is an indication that said compound is a candidate compound for ameliorating or delaying an impaired glucose intolerance condition.

8. A method for the identification of a compound that is a candidate compound for ameliorating or delaying an impaired glucose tolerance condition, said method comprising the steps of:

- (a) providing an *age-1*, *daf-16* mutant nematode;
- (b) expressing in the cells of said nematode a mammalian FKHR polypeptide, whereby said nematode forms a dauer larva; and
- (c) contacting said dauer larva with a compound, wherein release from the dauer larval state is an indication that said compound is a candidate compound for ameliorating or delaying an impaired glucose intolerance condition.

9. The method of any of claims 5-8, wherein said nematode is *C. elegans*.

10. The method of any of claims 5-8, wherein said compound is a candidate compound for ameliorating or delaying an impaired glucose tolerance condition that involves obesity or atherosclerosis.

11. A method for identifying a compound that modulates the interaction between DAF-16 and a second DAF polypeptide, said method comprising the steps of :

- (a) providing a DAF-16 polypeptide;
- (b) providing a second DAF polypeptide;
- (c) allowing said DAF-16 polypeptide and said second DAF polypeptide to interact and form a complex;
- (c) contacting said complex with a candidate compound, a modulation in the interaction between said DAF-16 and said second DAF polypeptide identifying a modulatory compound.